

1. A switching device for forwarding a data packet having a header portion and a payload portion, the switching device comprising:
 - an input for receiving the data packet;
 - a memory for storing an offset value and a comparator value;
 - a filter coupled to the input and the memory for identifying a position in the payload portion of the data packet in accordance with the offset value and comparing information located at the identified position with the comparator value to generate a filter outcome; and
 - an output coupled to the filter for forwarding the data packet or not in accordance with the filter outcome.
2. The switching device of claim 1, wherein the offset value is configurable by a user.
3. The switching device of claim 1 further comprising a merging logic for merging the filter outcome with packet forwarding information provided by forwarding decision logic.
4. The switching device of claim 3, wherein the merging logic modifies the packet forwarding information assigned by the forwarding decision logic in accordance with the filter outcome.
5. The switching device of claim 4, wherein the modification comprises modification of a priority assigned to the data packet.
6. The switching device of claim 4, wherein the modification comprises modification of a destination address assigned to the data packet.

7. The switching device of claim 1 comprising multiple filters coupled to the input, the filter outcome of each of the multiple filters being combined to produce a filter group outcome for forwarding the data packet or not based on the filter group outcome.

8. In a switching device, a method for processing a data packet having a header portion and a payload portion, the method comprising the steps of:
receiving the data packet;
identifying a position in the payload portion of the data packet in accordance with an offset value;
comparing information located at the identified position with a comparator value to generate a filter outcome; and
forwarding the data packet or not in accordance with the filter outcome.

9. The method of claim 8 further comprising the step of configuring the offset value.

10. The method of claim 8 further comprising the steps of:
receiving packet forwarding information from a forwarding decision logic; and
merging the filter outcome with the packet forwarding information.

11. The method of claim 10 further comprising the step of modifying the packet forwarding information assigned by the forwarding decision logic based on the filter outcome.

12. The method of claim 11, wherein the step of modifying comprises the step of modifying a priority assigned to the data packet.

13. The method of claim 11, wherein the step of modifying comprises the step of modifying a destination address assigned to the data packet.

14. The method of claim 8 further comprising the steps of:
storing multiple offset values associated with multiple filters;
combining the filter outcome of each of the multiple filters to produce a filter group outcome; and
forwarding the data packet or not in accordance with the filter group outcome.

15. A switching device for forwarding a data packet having a header portion and a payload portion, comprising:

an input for receiving the data packet; and

a filter coupled to the input for identifying a position in the payload portion of the data packet in accordance with an offset value and comparing information located at the identified position with a comparator value to generate a filter outcome;

wherein packet forwarding information is generated in accordance with the filter outcome and the packet is forwarded on an output accordance with the packet forwarding information.

16. The switching device of claim 15, wherein the offset value is configurable by a user.

17. The switching device of claim 15 further comprising a merging logic for merging the filter outcome with packet forwarding information provided by forwarding decision logic.

18. The switching device of claim 17, wherein the merging logic modifies the packet forwarding information assigned by the forwarding decision logic in accordance with the filter outcome.

19. The switching device of claim 18, wherein the modification comprises modification of a priority assigned to the data packet.

20. The switching device of claim 18, wherein the modification comprises modification of a destination address assigned to the data packet.

21. The switching device of claim 15 further comprising multiple filters coupled to the input, the filter outcome of each of the multiple filters being combined to produce a filter group outcome for forwarding the data packet or not based on the filter group outcome.

22. In a switching device, a method for forwarding a data packet having a header portion and a payload portion, the method comprising the steps of:

receiving the data packet;

identifying a position in the payload portion of the data packet in accordance with an offset value;

comparing information located at the identified position with a comparator value to generate a filter outcome;

generating packet forwarding information in accordance with the filter outcome; and

forwarding the packet in accordance with the packet forwarding information.

23. The method of claim 22, further comprising the step of configuring the offset value by a user.

24. The method of claim 22 further comprising the step of merging the filter outcome with packet forwarding information provided by forwarding decision logic by a merging logic.

25. The method of claim 24, further comprising the step of modifying the packet forwarding information assigned by the forwarding decision logic in accordance with the filter outcome by the merging logic.

26. The method of claim 25, wherein the modification comprises modification of a priority assigned to the data packet.

27. The method of claim 25, wherein the modification comprises modification of a destination address assigned to the data packet.

28. The method of claim 22 further comprising the step of coupling multiple filters to the input, the filter outcome of each of the multiple filters being combined to produce a filter group outcome for forwarding the data packet or not based on the filter group outcome.

29. A switching device for forwarding a data packet having a header portion and a payload portion, comprising:

an input for receiving the data packet;

a memory for storing an offset value to identify a position in either the header portion or the payload portion of the data packet; and

a filter coupled to the input and the memory for identifying a position of the data packet in accordance with the offset value and comparing information located at the identified position with a comparator value to generate a filter outcome;

wherein packet forwarding information is generated in accordance with the filter outcome and the packet is forwarded on an output in accordance with the packet forwarding information.

30. The switching device of claim 29, wherein the offset value is configurable by a user.

31. The switching device of claim 29 further comprising a merging logic for merging the filter outcome with packet forwarding information provided by forwarding decision logic.

32. The switching device of claim 31, wherein the merging logic modifies the packet forwarding information assigned by the forwarding decision logic in accordance with the filter outcome.

33. The switching device of claim 32, wherein the modification comprises modification of a priority assigned to the data packet.

34. The switching device of claim 32, wherein the modification comprises modification of a destination address assigned to the data packet.

35. The switching device of claim 29 further comprising multiple filters coupled to the input, the filter outcome of each of the multiple filters being combined to produce a filter group outcome for forwarding the data packet or not based on the filter group outcome.

36. In a switching device, a method for forwarding a data packet having a header portion and a payload portion, the method comprising the steps of:

storing on the switching device an offset value to identify a position in either the header portion or the payload portion of the data packet;

receiving the data packet;

identifying a position in the payload portion of the data packet in accordance with the offset value;

comparing information located at the identified position with a comparator value to generate a filter outcome;

generating packet forwarding information in accordance with the filter outcome;
and

forwarding the packet in accordance with the packet forwarding information.

37. The method of claim 36, further comprising the step of configuring the offset value by a user.

38. The method of claim 36 further comprising the step of merging the filter outcome with packet forwarding information provided by forwarding decision logic by a merging logic.

39. The method of claim 38, further comprising the step of modifying the packet forwarding information assigned by the forwarding decision logic in accordance with the filter outcome by the merging logic.

40. The method of claim 39, wherein the modification comprises modification of a priority assigned to the data packet.

41. The method of claim 39, wherein the modification comprises modification of a destination address assigned to the data packet.

42. The method of claim 36 further comprising the step of coupling multiple filters to the input, the filter outcome of each of the multiple filters being combined to produce a filter group outcome for forwarding the data packet or not based on the filter group outcome.